Low Carbon and Energy Efficient Products - Carbon Calculation & Labeling of Products

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Version 1.0

AGENDA

Item
Introduction
Market Trends
Product Carbon footprint
Case studies

DEDICATED SUSTAINABILITY SOLUTIONS FOR CONSUMER GOODS

SGS CTS Sustainability Services

Social Responsibility

- Social Audits
- Bribery prevention
- Anti-corruption Audits

Ecodesign

REACH

Restricted substances management

- SVHC testing
- REACH only representative
- SIEF and Third party representation
- Safety data sheet

Analyse → Design → Promote

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SGS's ECO-DESIGN SERVICES

- Benchmarks
- Market analysis
- Diagnostics
- Screening LCA
- Full LCA
- Carbon Footprint

- Eco-design consultancy
- Training
- Comparative LCA
- Creativity workshops
- Packaging improvement
- Responsible purchasing /procurement

- Communication strategy
- Green claims Validation
- Environmental Product declarations
- Environmental Labelling
- Product Carbon Footprint Marks

TRENDS AND NEEDS

- Consumers are increasingly concerned by the environmental impact of the product they buy
- Consumers / stakeholders demand more transparency and information on products:
  - According to a 2010 survey performed on the French market, 74% of consumers* - 66% in 2011- said they want to see environmental impact information on the products they buy.
  - 51% of consumers declare not to buy a product from companies whom they disapprove of their behavior and prefer to buy products in line with their own convictions.
- Carbon footprint is one of the most widely known and recognised environmental impacts

* Ethicity 2010 & 2011, yearly survey on French market

CARBON FOOTPRINT : A MARKETING TOOL

- Adding a carbon footprint on a product provides consumers with the simple selection criteria they are looking for

- Brands and Retailers are increasingly using the environmental impact of the product as a marketing tool.

National Geographic recently worked with WWF to reduce CO2 emissions from operations by 80 percent by the end of 2010 and to reduce CO2 emissions from its magazine paper and printing materials supply chain by 10 percent by 2015. In 2007, they achieved LEED-EB Gold,

Wednesday, 22 February 2012 20:57

National Geographic Society - For Planet and People Media Category Award

Featured

Written by Alterra

The National Geographic Society has been inspiring people to care about the planet since 1888, including areas of geography, archaeology and natural science, and the promotion of environmental and historical conservation. National Geographic has paid special attention to the impact of their own activities on the Earth and has truly lived up to Carbonfund.org's motto to Reduce what you can, Offset what you can't™. National Geographic recently worked with WWF to reduce CO2 emissions from operations by 80 percent by the end of 2010 and to reduce CO2 emissions from its magazine paper and printing materials supply chain by 10 percent by 2015. In 2007, they achieved LEED-EB Gold, and the NGS Headquarters also has placed these buildings in the top 25% of the most energy-efficient buildings in the USA. National Geographic keeps more than 60 percent of all its waste out of landfills, their employees are able to compost their lunch leftovers as well as the cafeteria's special compostable takeaway containers, cups, and straws. And this is in addition to a robust HQ recycling program including electronics, ink toners, metals, plant materials, and most building and office supplies. What they have been unable to reduce on their premises, they have offset with Carbonfund.org for -four years. This work would not be possible without the employee-driven efforts of their GoGreen Committee, and specifically Hans Wegner.

NATIONAL GEOGRAPHIC™

Coca-Cola reveals carbon footprints of Coke brands

LONDON - Coca-Cola Great Britain has announced details of the carbon footprints for its Coca-Cola, diet Coke and Coke Zero brands, as certified by the Carbon Trust.

GROUPE Casino

L'INDICE CARBONE de ce produit

210g

Faible impact environnemental

Fort impact environnemental

4 Filets de Cabillaud

Emballage 37 g

Déchets 39%

Transport 89%

3000 km

Si on trie tous !

Impact environnemental: Très faible — Très important

PEPSICO INTERNATIONAL

Pepsi Lay's Tropicana Quaker

PepsiCo Inc, Reducing Carbon Footprint!

March 16, 2011 By: Natasha Aronov Category: Lead Exchange, Social Networking

Thank you for visiting our Lead Exchange Blog! I hope you will find it useful. Good luck!

Big news from Pepsi this week as they announced they will stop using plastic to make their bottles! In an effort to go green, Pepsi has transitioned making its soda bottles from plastic to making them entirely out of plant material.

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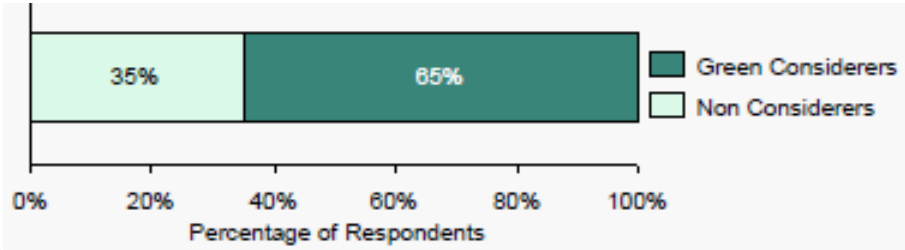
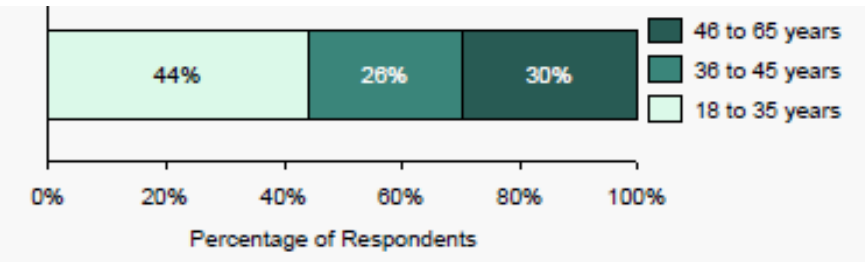
GREEN IS A MAINSTREAM

- 76% of consumers purchase some green products currently
- 8% of consumers buy green products as their purchases majority
- 1% of consumers stop buying after the purchase of green products at one point
- Almost all consumers who buy green expect to remain green, while those who don't buy certain product categories of green products intend to do so in the future

Purchase Behavior



Age



Source: A survey of 520 US green consumers who are aware of green products and who have purchased green products in the past, **Grail Research, LLC**

PRODUCT ENVIRONMENTAL ASSESSMENT-CO2 LABELLING

- In 2007, Casino France collected the environmental data concerning 220 products with the supplier's participation.
- CO2 labelling will be implemented on 3000 product approximately.

Explanation of Casino group concerning its initiative of CO2 labelling

A little ruler to know the environmental impact level of the Product.

Source: www.groupe-casino.fr

JAPAN

carbon footprint labelling on food packaging and other products in an ambitious scheme to persuade companies and consumers to do more to reduce their GHG emissions.

The labels will appear on food, drink, detergents and electrical appliances

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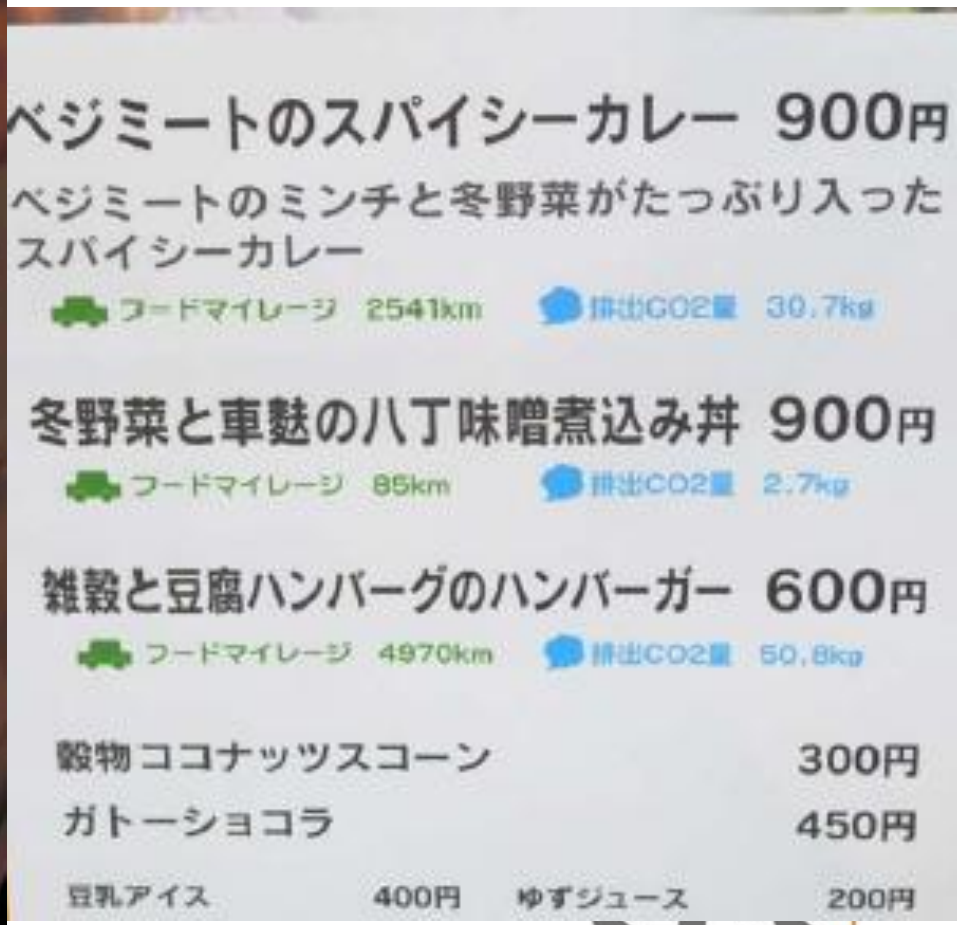
PRODUCT CARBON FOOTPRINT



KOREA CARBON FOOTPRINT LABEL

Selection of 10 target products for Pilot Carbon label project beginning from 2008

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UNITED STATES: CARBON FREE LABEL

The Carbon Fund, an independent non-profit carbon offset provider, developed the 'Certified CarbonFree' label along with Edinburgh Center for Carbon Management

This label is based on ISO lifecycle analysis standards, the GHG protocol and the UK Carbon Trust's (2007) Methodology

Range covers certain products of drinks manufacturer, organic sugar company & also cellphone company

GERMAN 1ST PROJECT OF PCF

In the first project of its kind in Germany, ten businesses came together in 2008 to start measuring the life cycle emissions of CO2 and other greenhouse gases related to selected products and services - the Product Carbon Footprint

CARBON LABELS IN SWITZERLAND

Switzerland's top supermarket chain, Migros, last year embarked on a product carbon labelling programme. Consumers can now find seven Migros own-brand products carrying the Climatop carbon label.

The test results are independently checked. To be a CO_2 Champion, a product must emit around 20 less CO_2. Migros introduced the label in 2008. Now more than 100 products carry the logo

MIGROS

-23% CO_2

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PRODUCT CARBON FOOTPRINT

台灣碳標籤

135g CO2

Taiwan

Thailand

Korea

SGS

Germany

France

UK

Japan

PRODUCT CARBON FOOTPRINT

- SGS Sustainability Services can provide assistance with all steps up of implementation for partial or full life cycle including calculation using specialist databases
- Data collection includes **primary data collected from suppliers** and **secondary data** from life cycle databases / literature researches

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ECODESIGN IN PRODUCT AND PACKAGING

A holistic environmental approach – **Life Cycle Thinking**

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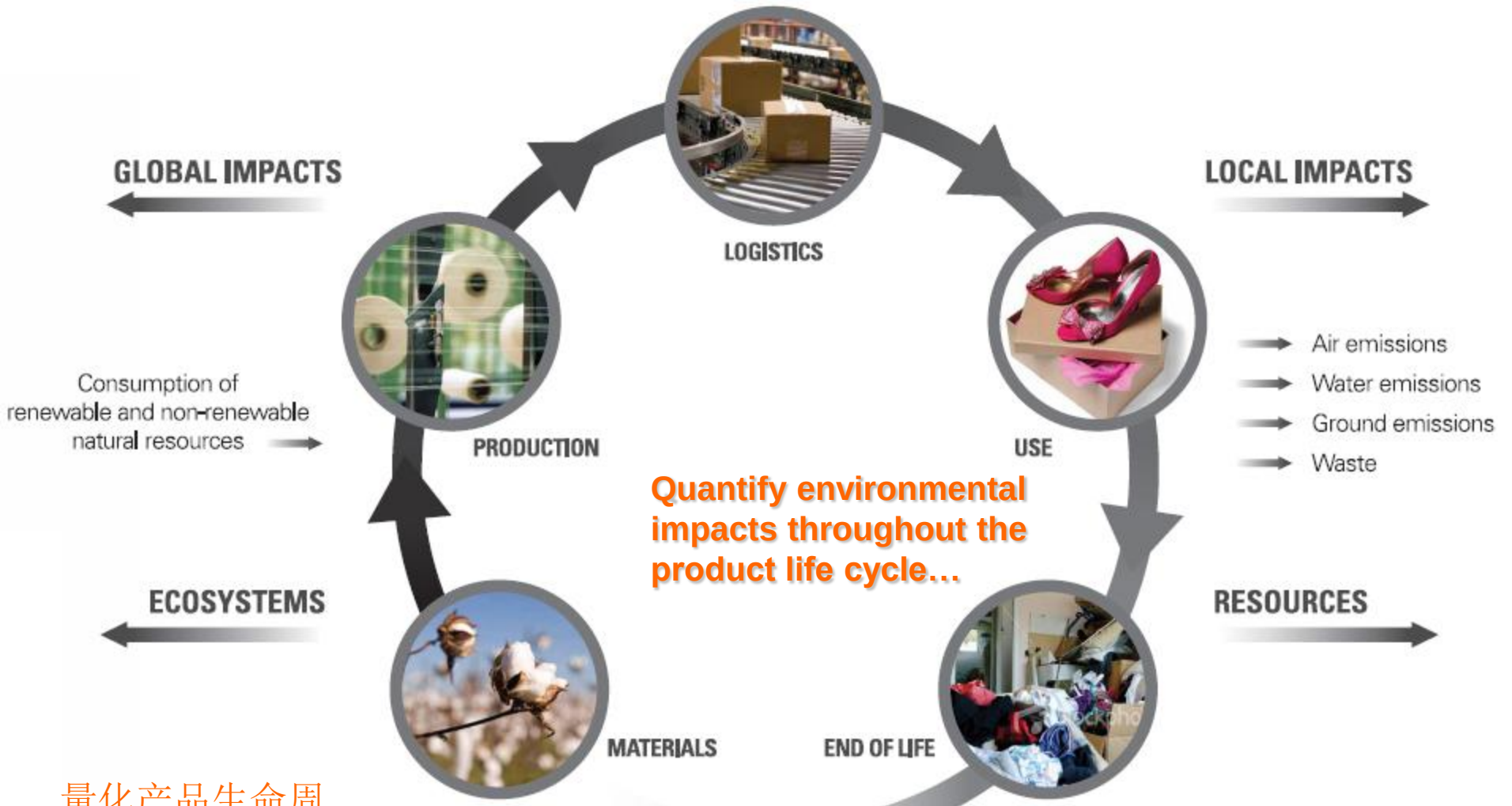
ECO-DESIGN

- Eco-design is a crucial factor to minimize the environmental impact of products. As a preventive approach, ecodesign will determine the processes, materials and energy required to produce a product, its functionalities and its destination at the end of its life cycle is determined during the design stage.
- Ecodesign plays a key role in reaching sustainability goals.

LIFE CYCLE APPROACH



量化产品生命周期的环境影响

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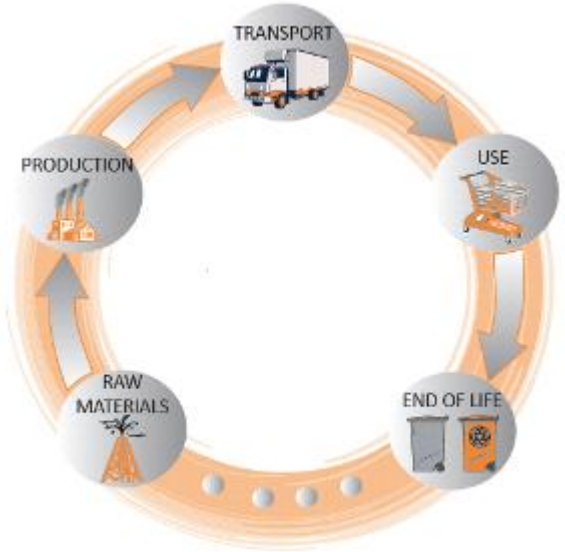
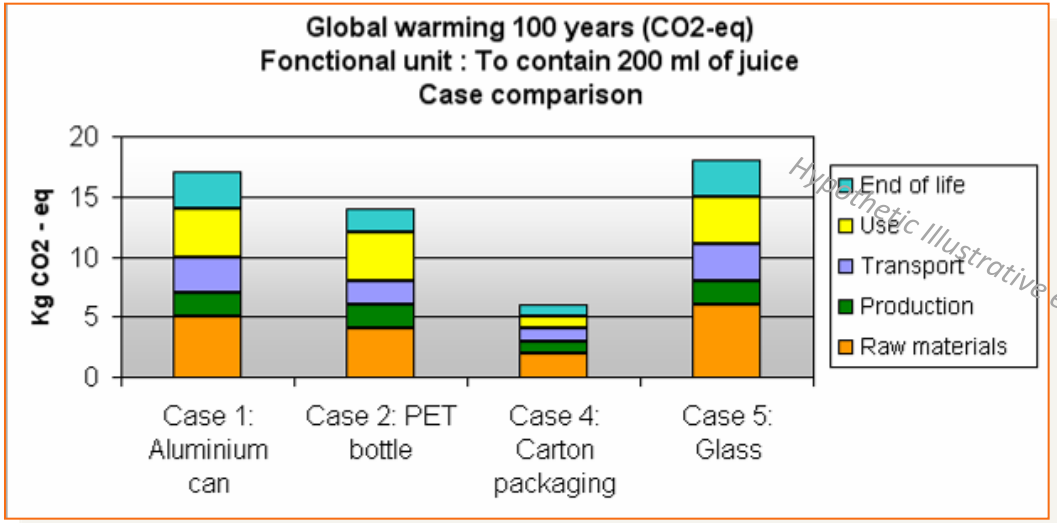
PRODUCT ENVIRONMENTAL ASSESSMENT- LIFE CYCLE ASSESSMENT

Life **C**ycle **A**ssessment (LCA) - compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle <ISO 14040>

- **Inputs, outputs :** Material, Energy, Waste, Emissions, Product
- **Environmental impacts :** Global warming, Ozone depletion, Acidification…)
- **Life cycle :** Raw materials, Production, Transport, use, end of life.)





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SGS CARBON FOOTPRINT MARKS

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EFFECTIVE DRIVERS FOR CONTINUOUS IMPROVEMENT...

Attests that a robust calculation of the total greenhouse gas emissions of a product has been performed over its life cycle

TRANSPARENCY

Customer can:
- Start communicating directly on product
- Set up a carbon reduction strategy
- Identify reduction and cost saving opportunities
- Define a target

Attests that the Carbon Footprint of a product has been reduced in a continuous improvement scheme from the initial Carbon Footprint Calculation

REDUCTION ACHIEVEMENT

Customer can:
- Assess progress
- Act for the environment

Attests that once significant reductions in GHG emissions of the product have taken place, any residual emissions have been compensated through recognised external credits schemes

OFFSET

CONTINUOUS IMPROVEMENT

SGS CARBON FOOTPRINT MARKS

Greenhouse gas emissions of this 1kg of chicken meat are 3.5kg CO2 eq. The calculation is based on the data collected in Jan 2010 from cradle to gate.

SGS Report No. 123456

For more information: www.sustainability.sgs.com

- A mark that can be **applied on any products**
- A label that shows **how** and **when the calculation was done.**
- **Registration** and legal assessment done to use the label worldwide

ADVANTAGES OF THE SGS SCHEME

- **First global mark** in the world
- **Not a certification mark**
- No **extra-cost**

PRICING

- The more studies are performed, the less it costs.
  - → Price must not be a barrier.

- Part 1 – Price for footprint **CALCULATION**
  - The main cost comes from the initial carbon calculation. The average cost per product decreases as the number of products per category increases.
  - Quoted in man-days

- Part 2 – Price for **LICENSE FEES**
  - The more products that SGS assesses the carbon footprint, the cost of the mark reduces on a sliding scale
  - Our license fees only cover the cost of use, registration and assessment of the mark.

A CONCEPT THAT RESONATES

CARBON FOOTPRINT

Also leads to opportunities on

- ✓ Process
- ✓ Raw materials
- ✓ Product
- ✓ Supply chain and transport
- ✓ Risk management
- ✓ Reputation
- ✓ Customer loyalty
- ✓ Brand image
- ✓ Cost

shows your product's

- ✓ Environmental impact

SGS ORGANIZATION

- 7 teams all around the world to ensure SGS is offering this service everywhere

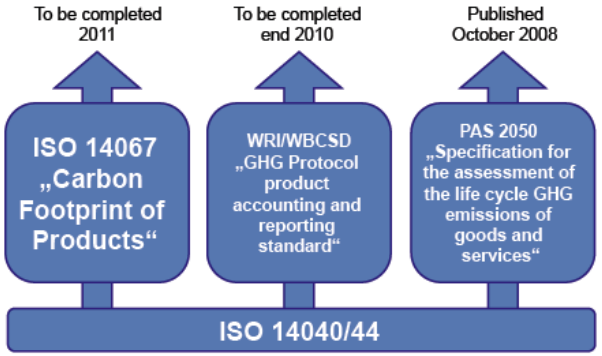
Sustainability teams in :

- **Asia** : Hong-Kong, China, India and Thailand
- **Europe** : France, Uinited Kigdom and Germany
- **America** : United States of America.

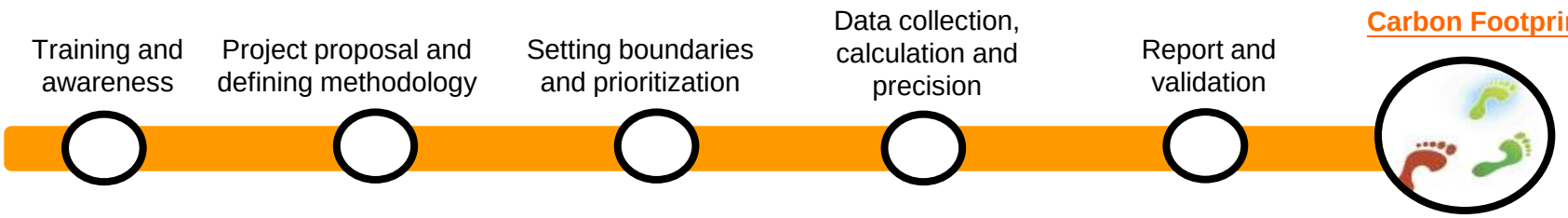
- A global Sustainability network that allows a strong collaboration with SGS' affiliates to support (action plans definition, data collection, communication, etc…) and to deliver.

HOW DOES IT WORK ?

THREE INTERNATIONAL PCF STANDARDS



- SGS consultants calculate carbon footprints The client decides which standard he prefers to use according to the local context.
  - WRI GHG Protocol Scopes 1-3 and upcoming product life cycle and supply chain standards
  - ISO 14067 – Carbon Footprint of products
  - BSI PAS 2050:2008: carbon footprint of products and service
- SGS consultants have access to specialist tools and software to assess your product : Simapro LCA software, Ecoinvent database..

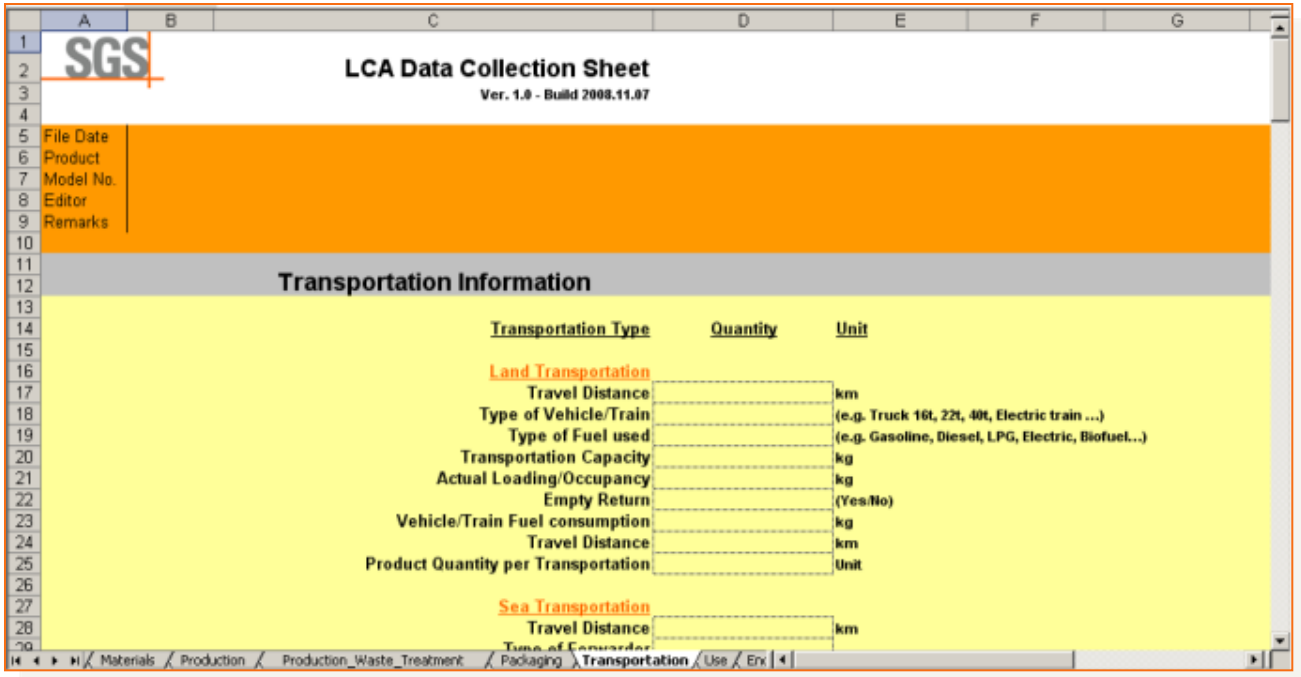


WHICH LOGIC BEHIND A PROJECT ?

- **Our mission:**
  - Introduce carbon footprint concept our client's teams
  - Perform the carbon footprint of owned activities by collecting data from the plants
  - Complete the product carbon footprint thanks to scientific literature review and databases
- **Methodology:**
  - GHG Protocol, ISO 14044 and IPCC 2007 Emission Factors

DATA COLLECTION FROM SUPPLIERS

- Questionnaires are used to collect relevant data from supply chain



LCA Data Collection Sheet

Ver. 1.0 - Build 2008.11.07

File Date
Product
Model No.
Editor
Remarks

Transportation Information

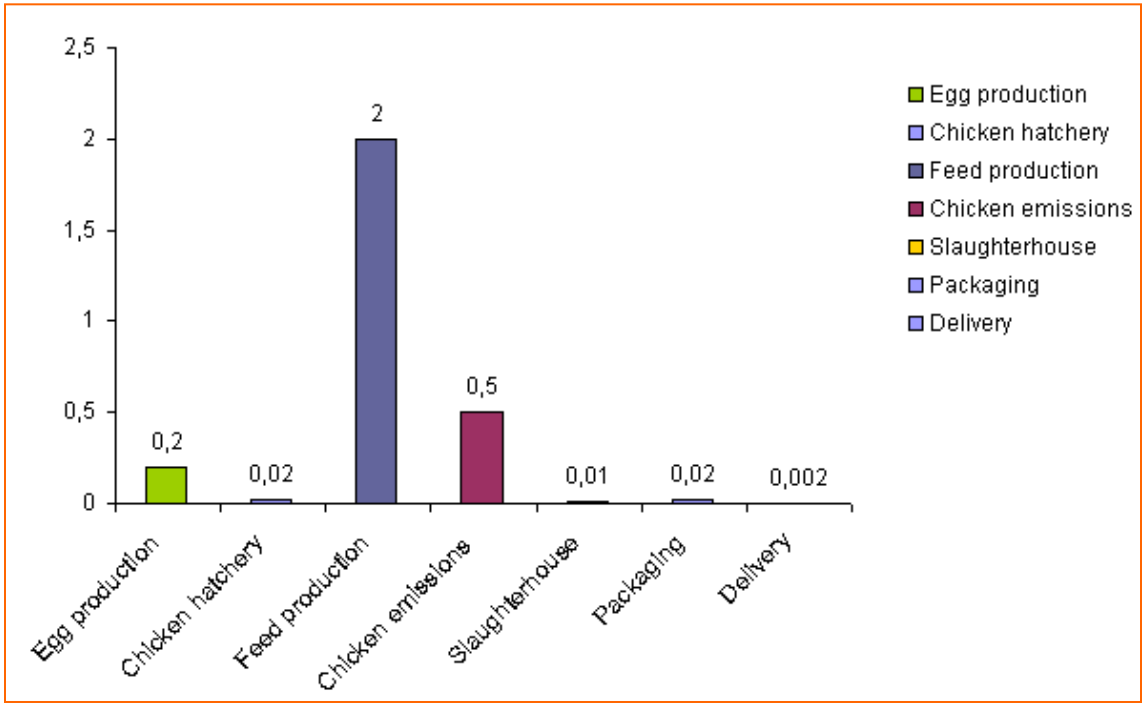
Transportation Type	Quantity	Unit
Land Transportation		
Travel Distance		km
Type of Vehicle/Train		(e.g. Truck 16t, 22t, 40t, Electric train ...)
Type of Fuel used		(e.g. Gasoline, Diesel, LPG, Electric, Biofuel...)
Transportation Capacity		kg
Actual Loading/Occupancy		kg
Empty Return		(Yes/No)
Vehicle/Train Fuel consumption		kg
Travel Distance		km
Product Quantity per Transportation		Unit
Sea Transportation		
Travel Distance		km

Materials | Production | Production_Waste_Treatment | Packaging | Transportation | Use | En

- The primary activity data are combined with emission factors and other secondary data sources to calculate the carbon footprint of the product

PERFORM CALCULATION AND ASSESS IMPROVEMENT OPPORTUNITIES

- Results chart : GHG emissions of product (e.g. Chicken meat)



- Example summary conclusions
  - Feed production: Change the recipe and choose other cereal types to decrease the carbon footprint
  - Improvement of the direct farm emission by a specific waste management

DELIVERABLE

CARBON FOOTPRINT LIFE CYCLE ASSESSMENT FOR PRODUCT
March 2012
Version 1

COMPANY NAME
PRODUCT

FINAL REPORT:

- Description of product
  - Raw material, production processes,…
- Methodology
  - Scope of the study
    - Functional unit, system boundaries, key assumptions
    - Methodology
  - Inventory analysis
    - Data collection and validation, allocation principles
  - Impact assessment and interpretation
- Results

ACTION PLAN:

- SGS teams support to build a reduction Action plan.

CARBON FOOTPRINT MARK:

- SGS deliver the material to communicate (marks) and the rules associated, publish on it website the traceability of what as been calculated.

SGS CASE STUDIES

CARBON FOOTPRINT - FOOD PRODUCTS

Company's Background
A producer and distributor of tropical fruits products (pureed banana, dried bananas etc) based in the UK

Project
Carbon footprint of dried and pureed tropical fruit

Client's Objectives
- To show their customers that they are an environmentally conscious supplier
- To formulate a carbon footprint reduction plan

Challenges
- Different locations had to be considered in the study:
    - Manufacturing processing plant in Ecuador
    - Client in the UK
    - One supplier in Ecuador
- Wanted a PAS2050 compliance therefore we needed to collect primary data

How did we make this project successful?
- By working internationally within SGS:
    - Involving team members in UK, Ecuador, France
    - Local environmental auditors in Ecuador
    - LCA expert (Spanish speaking) and UK PAS2050 experts

Feedback from client:
They were happy that we could communicate in English and Spanish so they could rely on SGS to lead communication with their local farmers

CARBON FOOTPRINT - FOOD PRODUCTS

Company's Background
A producer of mineral water, soft drinks and beer in Germany. Focused in producing organic beverages.

Project
Product Carbon footprint of mineral water (with & w/o gas)
Carbon Footprint of filling line

Client's Objectives
• Wanted to implement organic mineral water into their portfolio
• Wanted to analyse different delivery scenarios as well as different packaging scenarios (glass bottle vs. PET)

Challenges
• Difficulty to get primary data from bottle manufacturing plant

Did this project lead to other projects with this client ?
• Yes, client is interested in Carbon Footprint of glass bottle production

CARBON FOOTPRINT - FOOD PRODUCTS

Company's Background
A leading German producer and distributor of meat (pork, veal, beef)

Project
Critical review of Product Carbon Footprint and other environmental indicators of beef study

Client's Objectives
• Client is working on carbon footprinting the past three years (pork, veal) and wanted to finish the first series of evaluation of their products

Challenges
• Short timing

How did we make this project successful?
• Good preparation was already existing from past critical reviews
• Good communication with assessor

Feedback from client:
• Interested to put the Carbon footprint mark based on these verifications
• Might be interested in carbon footprint calculation of next series through SGS

CARBON FOOTPRINT AND LCA – PENS

Company's Background
The European subsidiary of a major writing instrument manufacturer (Japan HQ)

Project
- Calculation of the Corporate Carbon Footprint of their European operations
- Detailed LCA of in-house processes
- Screening LCA + Eco-calculator for a full product range
- Brainstorm on a reduction action plan

Client's Objectives
- To get prepared for the French Environmental Labelling scheme
- To verify and formalise their « green » line of products
- To find new ways to reduce their corporate environmental footprint

Challenges
- Difficulty to get some of the data:
    - Because HQ in Japan
    - Because of some process /machines

How did we make this project successful?
- Good communication – good project management and follow-up
- Training of client internal teams including internal project team

Feedback from client:
Thanks to our tailor-made tool, the Client's design team is now able to perform its own Life Cycle Analysis enabling them to choose the best way to design a product upstream.

This project was followed by the development of key environmental indicators and PCF of accessories.

CARBON FOOTPRINT - EVENTS

Company's Background
An exhibition group in Germany is organizing a trade fair for sports and sports textiles

Project
Carbon footprint of a specific event within the trade fair

Client's Objectives
• The client is seeking for ecological improvement of the location. Several installations were already implemented
• The client wants to initiate a pilot study on carbon footprint to identify main hot spots in CO_2 emissions

Challenges
• Various parties were involved in the organisation
• Collecting of primary data from different parties and participants
• Data accuracy and data quality

Feedback from client:
• Project might be enlarged for whole exhibition
• Might be also applicable for exhibition in China

CARBON FOORPRINT TO SELECT GREEN PRODUCT LINES

Company's Background
A Leading European Buying Company

Project
Product Carbon Footprinting

Client's Objectives
- They wanted to develop a green product line
- Internal education to understand their products' environmental aspects

Challenges
- The range of products was wide and diverse (toys, garden tools, kitchenware and furniture):

How did we make this project successful?
- Support from technical teams of different product business units, R&D and Sustainability Team
- Strengthen our teams' knowledge in a wide range of products

Feedback from client:
Satisfied with the deliverable which they qualified as a very practical guidelines and useful information

Did this project lead to other projects with this client?
Yes: Environmental Audit (GSCP) & other testing/audit programs

Product Carbon Footprint - biobased material

Company's Background
An environmental technology company in China

Project
Development of a new Bio-based material

Client's Objectives
•To calculate the Carbon Footprint of this Bio-based material
•To compare the Carbon Footprint of the material with the Carbon footprint of a similar material from a foreign company
•To provide internal reference
•To demonstrate to their clients the carbon footprint of the material

Challenges
•Before contacting SGS, the client had accessed a PCF report from a foreign manufacturer. With this study, the client expected to get similar conclusions and show that their material had a lower carbon footprint than traditional plastic materials.
•Some process and material data were confidential, so assumption was needed.

How did we make this project successful?
•Good cooperation and understanding between client and SGS
•Researched the foreign manufacturer's PCF report deeply
•Found the energy reduction areas which can help the client to decrease its product footprint

Feedback from client:

Client was satisfied with our explanation of the foreign manufacturer's PCF report and with our calculations and the report we produced

Product Carbon Footprint – bathroom equipments

Company's Background
A leading non-metallic mining & new material manufactory in China

Project
Development of Bathroom products made from new material and treatment

Client's Objectives
- To know the carbon footprint of bathroom products made from new material
- To provide internal reference for low carbon product development
- To show their client and local government that their product is environmental friendly

Challenges
•The government showed interest in these new bathroom equipment made from non-traditional materials.
•Client wanted to get the calculation report within one month of the project kick-off.
•The report had to be checked by a University professor.
•The products were still under testing

How did we make this project successful?
•Kept good communication with the client, ensured the data collection was efficient.
•Researched the PCR of metal products and the energy consumption of ceramic products to use as benchmark and reference.

Feedback from client:
•Client was very satisfied with the report both on the delivery time and in terms of the results.
•Client communicated the positive news through their channels.

Product Carbon Footprint - textile

Company's Background
A leading textile company focusing on the textile Print and Dye in China

Project
Carbon footprint of satin drill

Client's Objectives
To effectively manage energy consumption and GHGs emissions
To build up the awareness of low carbon

Challenges
•Client interested in managing the energy consumption and product GHGs, but their basic awareness of PCF needed to be built up.
•The challenge was in finding existing data reference.

How did we make this project successful?
•Started with a training session for the client project team for awareness and basic capability building
•Provided technical advices during the data-collection period
•Supported the client project team on the product information and data collection

Feedback from client:

- Our client is satisfied with the training and awareness delivery in general.
- Good marketing response

Product Carbon Footprint Mark

CSRtextile | Eco-Textile Labelling Guide | Eco-metrics | Textile Dyer | Eco-Composites | MCL Global

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11 June 2011

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First Chinese firm earns PCF mark

Wednesday, 01 June 2011

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GENEVA - A Chinese print and dyeing company has become the first textile manufacturer in the country to receive a Product Carbon Footprint (PCF) Mark from global testing house, SGS.

You need to be a subscriber to read the full story

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FASHION AND RETAIL

- Ethical award for UK label
- Plan A delivers £70M for M&S
- Organic body outlines new US textile ruling

AND MANY OTHERS IN CHINA

FOOD
AGRICULTURE
PRODUCT/SEAFOOD

FOOD
MILK POWDER

HARDGOODS
TERTIARY WOODEN
PACKAGING

E&E
INDUSTRIAL
ELECTRIC FANS

HARDGOODS
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